BRUHATH BANGALORE MAHANAGARA PALIKE

Name of the Work: The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency

Name of the Agency: M/s D R Infrastructure

REPORT FOR
EXECUTIVE ENGINEER,
BYATARAYANAPURA DIVISION
BBMP, BANGALORE.

PROJECT MANAGEMENT CONSULTANTS

TEJUS CONSULTANTS
CONSULTING ENGINEERS AND DESIGNERS
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Contractor/Agency : M/s D R Infrastructure.

Name of the Client : Executive Engineer, Yalahanka Project Division BBMP, Bangalore.

Estimated Cost : Rs 98.00 Lakhs

Status of Bill : 1st and Final bill

In the Presence of : (a) Mr. Suresh Devatharaj
Assistant Engineer, BBMP, Bangalore.
: (b) Mr. Sridhar B S
Assistant Executive Engineer, BBMP, Bangalore
: (c) Mr. Dilip Kumar, Site Engineer
M/s Tejus Consultants

S L No	Description of item	Comments/observation
1	EXCAVATION FOR PIPE LINE TRENCHES OF REQUIRED WIDTH by mechanical / & manual means including dressing sides, ramming of bottoms, providing barricading, danger lighting, shoring, strutting, dewatering, etc. IN ALL KINDS OF SOIL MIXED WITH BOULDERS of 30 cms size, etc. for: Pipes of all dia. for depth upto 2.0 M in all types of soils Note : If any shoring and strutting, will be paid separately as per the direction of the Engineer incharge of the work with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
2	for: Pipes of all dia for depth 2.0 to 4.0 M in all types of soils Note : If any shoring and strutting, will be paid separately as per the direction of the Engineer incharge of the work with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory

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3	Extra charges for excavation in all classifications in watery situations or foul conditions may be paid duly obtaining approval from the Chief Engineer as under towards DEWATERING with recuperation upto two meter depth and thereof for: Excavated depth upto 2m as per the direction of the Engineer incharge of the work with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
4	Excavated depth 2 to 4 m as per the direction of the Engineer incharge of the work with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
5	Excavation of Hard Rock by diamond rope cutting method. Using machinery like generator (electric), Hitachi (Hydraulic excavator), breaker, compressor and diamond rope with MS Rods etc, complete as per specifications and directions of the Engineer In Charge.as per the direction of the Engineer incharge of the work with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
6	Refilling of available earth around pipelines, in layers not exceeding 20 cms in depth, compacting each deposited layer by ramming after watering all lead and lift including cost of all labour including consolidation by mechanical means approved by Engineer in charge, when earth is at suitable moisture content with desired field density upto 95% maximum dry density (modified heavy proctor test) for restoration of roads without settlement including HOM of machineries, complete. (The contractor shall take care while consolidating the earth, so that, pipes laid are not damaged due to mechanical compaction and shall restore the damaged pipes at his own cost, in case of damage)	Work done up to the billed quantity and quality is satisfactory
7	Supplying of following diameters S&S RCC SPUN/VIBRATED CAST PIPES (REINFORCED) of NP-3 class conforming to IS 458-1988 with latest amendments using Ordinary Port Land Cement, conveying to work site ,rolling, lowering into trenches , laying true to line and level including loading and unloading at both destinations and joining of pipes and specials including cost of specials including perfect linking of joints with jack to correct position including cost of jointing materials ie., rubber rings confirming to IS: 5382 for S&S RCC pipes with all leads and lifts as directed as giving necessary hydraulic test as per ISS and testing & comissioning etc., complete (contractor will make his own arrangements for procuring water for testing) Before execution of the work, Contractor shall carry out the Survey & will be paid extraas per the Separate Item. RCC NP-3 Class pipe of 400mm dia	Work done up to the billed quantity and quality is satisfactory

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8	Supplying of following diameters S&S RCC SPUN/VIBRATED CAST PIPES (REINFORCED) of NP-3 class conforming to IS 458-1988 with latest amendments using Ordinary Port Land Cement, conveying to work site ,rolling, lowering into trenches , laying true to line and level including loading and unloading at both destinations and joining of pipes and specials including cost of specials including perfect linking of joints with jack to correct position including cost of jointing materials ie., rubber rings confirming to IS: 5382 for S&S RCC pipes with all leads and lifts as directed as giving necessary hydraulic test as per ISS and testing & comissioning etc., complete (contractor will make his own arrangements for procuring water for testing) Before execution of the work, Contractor shall carry out the Survey & will be paid extraas per the Separate Item. RCC NP-3 Class pipe of 500mm dia	TEJUS CONSULTANTS Work done up to the billed quantity and quality is satisfactory
9	Construction of RCC manhole chambers of 1:1.5:3 proportion or approved type pre-cast RCC manhole chambers, constructed using form vibrators of standard type, with barricading, danger lighting and using of sight rails and bonding rods wherever necessary, shoring and strutting wherever required using ordinary port land cement, using 1:1.5:3 proportion RCC with 20mm and downgraded jelly, well graded sand and steel of approved quality , 200mm thick top concrete slab, having wall thickness and raft thickness as in approved drawings with an offset in raft all-round the chamber as in approved drawings benching concrete with 1:6 slope towards the central drain finished smooth, including fixing and grouting of pipes, including conveying to work spot supply and fixing SFRC manhole cover and frame(Heavy Duty) conforming to IS 12592 with latest amendments, on a bed of CC 1:2:4 supplying and fixing of minimum 3mm thick encapsulated plastic footsteps (as per IS 10910) on 12mm dia. Grade Fe-415 steel bar (as per IS1786) staggered at 300mm apart as detailed in Technical specifications, including sand bedding wherever required, disposal of surplus earth, watering, curing, engraving manhole number with flow direction on the inner cylindrical surface etc., complete including cost of reinforcement steel and fabrication charges and also cost and conveyance of all materials, labour with all lead and lifts for various diameters and depths noted below :As per specification, drawing and as directed by the Engineer - 15.1. 1.2m Diameter manholes a.1m depth	Work done up to the billed quantity and quality is satisfactory
10	Construction of RCC manhole chambers of 1:1.5:3 proportion or approved type pre-cast RCC manhole chambers, constructed using form vibrators of standard type, with barricading, danger lighting and using of sight rails and bonding rods wherever necessary, shoring and strutting wherever required using ordinary port land cement, using 1:1.5:3 proportion RCC with 20mm and downgraded jelly, well graded sand and steel of approved quality , 200mm thick top concrete slab, having wall thickness and raft thickness as in approved drawings with an offset in raft all-round the chamber as in approved drawings benching concrete with 1:6 slope towards the central drain	Work done up to the billed quantity and quality is satisfactory

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	finished smooth, including fixing and grouting of pipes, including conveying to work spot supply and fixing SFRC manhole cover and frame(Heavy Duty) conforming to IS 12592 with latest amendments, on a bed of CC 1:2:4 supplying and fixing of minimum 3mm thick encapsulated plastic footsteps (as per IS 10910) on 12mm dia. Grade Fe-415 steel bar (as per IS1786) staggered at 300mm apart as detailed in Technical specifications, including sand bedding wherever required, disposal of surplus earth, watering, curing, engraving manhole number with flow direction on the inner cylindrical surface etc., complete including cost of reinforcement steel and fabrication charges and also cost and conveyance of all materials, labour with all lead and lifts for various diameters and depths noted below :As per specification, drawing and as directed by the Engineer - Depth above 1m and below 2m	TEJUS CONSULTANTS
11	Construction of RCC manhole chambers of 1:1.5:3 proportion or approved type pre-cast RCC manhole chambers, constructed using form vibrators of standard type, with barricading, danger lighting and using of sight rails and bonding rods wherever necessary, shoring and strutting wherever required using ordinary port land cement, using 1:1.5:3 proportion RCC with 20mm and downgraded jelly, well graded sand and steel of approved quality , 200mm thick top concrete slab, having wall thickness and raft thickness as in approved drawings with an offset in raft all-round the chamber as in approved drawings benching concrete with 1:6 slope towards the central drain finished smooth, including fixing and grouting of pipes, including conveying to work spot supply and fixing SFRC manhole cover and frame(Heavy Duty) conforming to IS 12592 with latest amendments, on a bed of CC 1:2:4 supplying and fixing of minimum 3mm thick encapsulated plastic footsteps (as per IS 10910) on 12mm dia. Grade Fe-415 steel bar (as per IS1786) staggered at 300mm apart as detailed in Technical specifications, including sand bedding wherever required, disposal of surplus earth, watering, curing, engraving manhole number with flow direction on the inner cylindrical surface etc., complete including cost of reinforcement steel and fabrication charges and also cost and conveyance of all materials, labour with all lead and lifts for various diameters and depths noted below :As per specification, drawing and as directed by the Engineer - 15.1. 1.2m Diameter manholes 2.0m depth	Work done up to the billed quantity and quality is satisfactory
12	Construction of RCC manhole chambers of 1:1.5:3 proportion or approved type pre-cast RCC manhole chambers, constructed using form vibrators of standard type, with barricading, danger lighting and using of sight rails and bonding rods wherever necessary, shoring and strutting wherever required using ordinary port land cement, using 1:1.5:3 proportion RCC with 20mm and downgraded jelly, well graded sand and steel of approved quality , 200mm thick top concrete slab, having wall thickness and raft thickness as in approved drawings with an offset in raft all-round the chamber as in approved drawings benching concrete with 1:6 slope towards the central drain	Work done up to the billed quantity and quality is satisfactory

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	finished smooth, including fixing and grouting of pipes, including conveying to work spot supply and fixing SFRC manhole cover and frame(Heavy Duty) conforming to IS 12592 with latest amendments, on a bed of CC 1:2:4 supplying and fixing of minimum 3mm thick encapsulated plastic footsteps (as per IS 10910) on 12mm dia. Grade Fe-415 steel bar (as per IS1786) staggered at 300mm apart as detailed in Technical specifications, including sand bedding wherever required, disposal of surplus earth, watering, curing, engraving manhole number with flow direction on the inner cylindrical surface etc., complete including cost of reinforcement steel and fabrication charges and also cost and conveyance of all materials, labour with all lead and lifts for various diameters and depths noted below :As per specification, drawing and as directed by the Engineer - 15.1. 1.2m Diameter manholes depth above 2m and below 3.m	TEJUS CONSULTANTS
13	Construction of RCC manhole chambers of 1:1.5:3 proportion or approved type pre-cast RCC manhole chambers, constructed using form vibrators of standard type, with barricading, danger lighting and using of sight rails and bonding rods wherever necessary, shoring and strutting wherever required using ordinary port land cement, using 1:1.5:3 proportion RCC with 20mm and downgraded jelly, well graded sand and steel of approved quality , 200mm thick top concrete slab, having wall thickness and raft thickness as in approved drawings with an offset in raft all-round the chamber as in approved drawings benching concrete with 1:6 slope towards the central drain finished smooth, including fixing and grouting of pipes, including conveying to work spot supply and fixing SFRC manhole cover and frame(Heavy Duty) conforming to IS 12592 with latest amendments, on a bed of CC 1:2:4 supplying and fixing of minimum 3mm thick encapsulated plastic footsteps (as per IS 10910) on 12mm dia. Grade Fe-415 steel bar (as per IS1786) staggered at 300mm apart as detailed in Technical specifications, including sand bedding wherever required, disposal of surplus earth, watering, curing, engraving manhole number with flow direction on the inner cylindrical surface etc., complete including cost of reinforcement steel and fabrication charges and also cost and conveyance of all materials, labour with all lead and lifts for various diameters and depths noted below :As per specification, drawing and as directed by the Engineer - 15.1. 1.2m Diameter manholes 3.0m depth	Work done up to the billed quantity and quality is satisfactory
14	Conducting the level and strip of SURVEY of alignment of Main sewers of required diameter including all data required for generating GIS map of sewer network, preparation and submission of plan and LS with ground level at 30 M intervals and junction points along the centre line of the alignment etc. showing the right of way, any permanent features, culverts, branch sewer pipe etc. complete as per specifications and as directed by the Engineer in charge with all lead and lifts etc. complete for:: as per the direction of the Engineer incharge of the work with all lead	Work done up to the billed quantity and quality is satisfactory

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	and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	TEJUS CONSULTANTS
15	HC Water pumpset (3500 Ltr/Hr) as per the direction of the Engineer incharge of the work with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
16	Excavation for ramming / jacking pits and receiving pit. The work includes cutting of asphalted/ concrete surface, excavation in all types of soil and strata, dewatering, disposal of debris, refiling the trenches with consolidation, restoration of road surface to normal surface by concreting/asphalting etc., complete - Size up to 5 mts X 3 mts - depth up to 4 mts) as per the direction of the Engineer incharge of the work with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
17	Installation of product pipe by manual jacking method -Manufacturing, providing, transporting, rolling, lowering, laying& jointing, testing, commissioning of ERW (Electric ResistanceWelded), SAW (Submerged Arc Welded) MS pipe (Fe-410 grade)conforming to IS 3589-2001 with latest amendments includingperfect linking welding of joints to correct position including costand conveyance of pipes and materials with all lea., lift, cost of labour, loading and unloading of pipes for the following diameters with specified thickness of plate as noted below including bailing out of water wherever necessary for laying of MS carrier pipe of suitable dia including inside and outside of casing pipe painted with two coats of Anti corrossive tankmastic paint. Installation of steel pipe by Ramming / Jacking method to cross Railway track / NH /BDA /BBMP/Other roads/Existing utilities / NALA crossings, filling the gap between casing pipe and carrier pipe with quarry grit using compressor with all necessary equipments, plants etc, complete. Suitable spacers 0f HDP/MS or other similar material should be provided in between carrier & casing pipe to prevent carrier pipe forming metallic contact with casing pipe. The rates are inclusive of all taxes and duties.Note : a. The cost of jacking is inclusive of cost M.S. casing pipe of specified thickness b. The cost of carrying pipe is separate and provision shall be made as per site requirement c. The cost of Jacking includes all leads lifts, cost of consumables, fuel charges, labour and Taxes and duties. d. The cost of jacking and receiving pits shall be proposed separately . as per the direction of the Engineer incharge of the work with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
18	KSRB 2.8 : Providing and filling in foundation with granite / trap broken metal 100 mm. and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift. complete as per specifications. specification No. KBS. Bedding for pipeline per the direction of the	Work done up to the billed quantity and quality is satisfactory

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	Engineer Incharge of the work with all lead and lift. Loading and umloading and allother incidental charges etc..complete as per specifications and direction of the Engineer-in-charge of the work	TEJUS CONSULTANTS
19	Disposal off the excess exacated earth of all types vechile including loading,unloading with all lead and lifts,labour,HOM of machinaries etc.. For. Distance of 5 KM as per the direction of the enginner incharge of the work with all lead and lift,loading and unloading and all other incidental charges etc complete as per specifiaction and direction of the engineer in charge of the work.	Work done up to the billed quantity and quality is satisfactory
20	Providing and laying in position reinforced cement concrete of design mix M20 with OPC Cement @320kgs with 20mm down size graded granite coarse aggregates @0.69 cum and fine aggregates@0.460 cum.withsuper plasticsres @ 3 liters conforming to IS9103-1999 Reaffirmed-2008,machine mixed.concrete laid in layers not exceeding 15 cms thick,vibrated for all works in foundation for footings ,pedastales,retaining walls(any thickness)including attached plasters,columns,piers,abutments,pillars,posts,struts,buttresses,bed blocks,plinths etc..includi ng cost of all materials,labour,HOM Machinery,curing,complete.	Work done up to the billed quantity and quality is satisfactory
21	Providing and Removing centring,shuttering,propping etc.. For columns pillars,post and str pillars,post, and structs,square/rectangular/polygon/in plan including cost of all materilas,labour complete as per specifications.Specification No KBS 4.6.2	Work done up to the billed quantity and quality is satisfactory
22	Providing T.M.T steel reinforcement for R.C.C work including straighting,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to the adjoining membere wherever necessary complete as per design(laps,hooks and wasteage shall not be measured and paid)cost of material,labour,HOM Machinery complete as per specification.as per direction of the engineer incharge of the work with all lead and lift,loading and unloading all other incidential charges etc..complete as per specification and direction of the engineer-in-charge of the work.	Work done up to the billed quantity and quality is satisfactory
23	Diversion of water course by providing Coffer dams or bunds or island as may be necessary for piers and abutments foundations, bailing out or pumping water during excavation and until completion etc., complete. As per the direction of the Enginner incharge of the work with all lead and lift. loading and unloading and all othet incidental charges etc..complete as per specificatoin and direction of the in charge of the work	Work done up to the billed quantity and quality is satisfactory

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